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EXAMINER

ALSTRUM ACEVEDO, JAMES HENRY

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1616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/687,269	Applicant(s) MACDONALD ET AL.	
	Examiner JAMES H. ALSTRUM ACEVEDO	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-10,12,14,17,20-26,28,29 and 31-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 1, 4-10, 12, 14, 17, 20-26, 28-29, and 31-44 are pending. Applicants previously cancelled claims 2-3, 11, 13, 15-16, and 18. Applicants have newly cancelled claims 19, 27, and 30. Claims 40-44 are new. Applicants have amended claims 1, 4, 9-10, 17, 20, and 35. All rejections not explicitly maintained in the instant office action have been withdrawn per Applicants' claim amendments and/or persuasive arguments. The indication of allowable subject matter in the previous office action is withdrawn upon further consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-10, 12, 14, 20-24, and 31-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and claims dependent therefrom are vague and indefinite, because it is unclear whether the phrase, "the visual indicating agent being applied in differing concentrations in two or more zones" is in reference to two or more zones on the claimed article or whether it means that the visual indicating agent is applied in two or more zones of something else, such as a toilet bowl in which the claimed article is placed. Appropriate correction and clarification are required.

Claim 10 is also indefinite, because it is unclear what is meant by "sulfur-based" degradation products. The term "sulfur-based degradation products" is not defined in

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Applicants' specification. Sulfur is an element. An element cannot be degraded into smaller chemical entities, absent nuclear degradation of the element by fission or other nuclear processes. Thus, the metes and bounds of the phrase "sulfur degradation products" are unclear. It is noted that reference to "sulfur degradation products" is not equivalent to referring to degradation products of organic compounds that contain sulfur.

Response to Arguments

Applicant's arguments filed March 30, 2009 have been fully considered but they are not persuasive. Applicants have traversed the rejection of the term "sulfur degradation products" by arguing that this term would be well known by the ordinary skilled artisan to refer to degradation products that contain sulfur.

The Examiner respectfully disagrees. The term sulfur degradation product clearly refers to the products resulting from the degradation of sulfur. Furthermore, Applicants' arguments represent merely Applicants' opinion. Argument in the absence of evidence is unpersuasive. The rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 4-10, 12, 14, 17, 20-26, 27-29, and 31-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Persson (WO 00/76558) in view of Tratnyek (U.S. Patent No. 4,407,960) (of record), as evidenced by the June 1995 BOC Gases MSDS for ethylene oxide (of record), Horan (U.S. Patent No. 6,149,952) (of record), Baker, M. E. J. and Ramaier, N. (*Analyst*, 1994, 119(5), abstract), Patel (US 2003/0211618), Karapasha (WO 91/12030) (IDS), Takaoka et al. (US 2002/0006425), and Stoddart (EP 1214878) (IDS).

Applicant Claims

Applicants claim (1) an article for controlling odor comprising (a) a substrate including an odor controlling agent comprising nanoparticles and at least one visual indicating agent applied in differing concentrations in two or more zones that is selected from a group including

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4,4-bis(dimethylamino)-benzhydrol (i.e. Michler's hydrol); and (2) a method of visually indicating when an article for controlling odor is saturated.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Persson teaches **absorbent articles (e.g. sanitary napkins, tampons, diapers, etc.)** containing an additive agent and **a visual indicator that changes color upon changes in its local environment, such as changes in pH, moisture content, or temperature (e.g. methyl red, thymol, blue, bromothymol blue, etc.)** (title; abstract; pg. 3, lines 5-15). Odor-inhibiting additives used in the prior art in absorbent articles include zeolites and silica (pg. 1, lines 10-14).

Tratnyek teaches **clay-containing substrates, such as a coated boxboard, a coated paper cover stock, and a shiny coated paper stock, with ~0.1% w/w or 0.89% w/w of Michler's hydrol (i.e. 4,4'-bis(dimethylamino)-benzhydrol)** (Table II: Col. 12, lines 22-38). Clay is an odor absorbing material. In some embodiments, Tratanyek teaches a composition comprising Michler's hydrol, **silica**, and a polymeric binder (e.g. ethyl cellulose or styrene-maleic anhydride resin). (Id.) Tratanyek's system was developed as a visual indicator system in sterilization processes utilizing ethylene oxide (Title; Abstract; Table 1). Tratanyek teaches that the system may be applied to any substrate, such as **silica or cellulose blotters** (col. 4, line 68 through col. 5, line 8). The inclusion of an acid component, such as, 4,4-bis(4-hydroxyphenyl)pentanoic acid enhances the observed color change (col. 5, lines 10-15). Tratanyek teaches the various color changes of the indicator system comprising Michler's hydrol that upon observation indicate saturation of the article with ethylene oxide (See Table 1, items 3-5).

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Ethylene oxide is a slightly sweet-smelling gas (i.e. an odor), as evidenced by BOC Gases MSDS for ethylene oxide (prepared June 1, 1995) (see page 5 of 7, section 9: "Physical and Chemical Properties").

Karapasha teaches various odor-controlling materials, including **activated carbon, silica, molecular sieves, copper salts, copper ions, zinc chloride, clays, and activated alumina** (pg. 3, lines 25-37; pg. 4, lines 4-6; pg. 27, lines 4-14; claim 3).

Takaoka identifies **colloidal nanoparticulate silica** that is commercially available (e.g. SNOWTEX-AK) and uses this material in a method of **absorbing a malodorous compound (acetaldehyde)** ([0104]-[0105]; [0244]-[0260]).

Stoddart teaches compositions and articles for control of malodor comprising metal complexes, comprising divalent metal ions, such as **Cu²⁺, Zn²⁺, Ni²⁺, Co²⁺, and Fe²⁺**.

Horan teaches a method for determining deleterious bacterial growth in packaged food, wherein a gas, such as CO, CO₂, hydrogen sulfide, sulfur dioxide, ammonia results in a color change in response to the presence of gases due to indicators dispersed throughout a polymeric matrix (Title; abstract; col. 1, lines 49-61). **Alpha-naphtholbenzein is an exemplary indicator disclosed by Horan for the detection of gases evolved by bacteria, such as ammonia, hydrogen sulfide, or sulfur dioxide** (Horan: col. 7, lines 48-56). Horan teaches that the chemical response of the indicator is typically concentration dependent (col. 7, lines 31-32).

Baker teaches that **pararosaniline is an optical (i.e. visual) colorimetric indicator of formaldehyde** (an odorous compound) (abstract).

Patel teaches that **naphthochrome green is a known colorimetric visual indicator** ([0064], [0128]-[0130]).

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Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)

Persson lacks the teaching of an article comprising an odor absorbing agent comprising nanoparticles, metal ions, and the specific visual indicators recited in Applicants' claims. These deficiencies are cured by the combined teachings of the cited prior art.

Finding of Prima Facie Obviousness Rationale and Motivation
(MPEP §2142-2143)

It would have been prima facie obvious to modify the teachings of Persson to incorporate an odor absorbing material comprising nanoparticles, because the prior art teaches that silica is an odor absorbing material that is commercially available in the form of nanoparticles. An ordinary skilled artisan would have been motivated to include nanoparticulate silica, because Persson's articles are designed to absorb bodily fluids that are characterized by malodor. An ordinary skilled artisan would have had a reasonable expectation of including known odor-absorbing in Persson's articles, because the inclusion of odor-absorbers in absorbent articles is well known in the art. Regarding the inclusion of metal ions, the prior art recognizes the metal ions (e.g. copper ions) are odor absorbers. An ordinary skilled artisan would have been motivated to incorporate other known odor absorbing materials with nanoparticulate silica, because said combination of odor absorbing materials would be expected to exhibit at least an additive odor-absorbing effect. Using odor-absorbing materials to absorb odors provides the ordinary skilled artisan with a reasonable expectation of success.

Regarding the visual indicator, Tratnyek and Horan teach well known visual indicators that are sensitive to changes in pH and the indicator's local environment. It would have been

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prima facie obvious to the ordinary skilled artisan to utilize a known visual indicator in a manner consistent with its known utility. Thus, it would have been prima facie obvious to utilize Michler's hydrol (Tratnyek) or alpha-naphtholbenzein as a visual indicator, and an ordinary skilled artisan would have had a reasonable expectation of using these compounds as visual indicators, because these compounds are known visual indicators. Regarding reference to the visual indicator" being applied to two or more zones in differing concentrations", this limitation is not clearly understood as set forth above. Assuming *arguendo* that this limitation was intended to mean differing concentration regions of the visual indicator present on the claimed article, it would have been well within the ordinary skilled artisan to vary the concentration of visual indicators in different places on the article to ensure that the color change would be clearly visible to the user of the article. Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because the combined teachings of the prior art is fairly suggestive of the claimed invention.

Response to Arguments

Applicant's arguments with respect to claims 1, 4-10, 12, 14, 17, 20-26, 27-29, and 31-44 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1, 4, 6-10, 14, 17, 21, 28-29, 31, 33, 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Springer et al. (US 2003/0130631) (of record) in view of Horan (U.S. Patent No. 6,149,952) and MacDonald (US 2003/0203009).

Applicant Claims

Applicants claim (1) an article for controlling odor comprising (a) a substrate including an odor controlling agent comprising nanoparticles and at least one visual indicating agent applied in differing concentrations in two or more zones that is selected from a group including 4,4-bis(dimethylamino)-benzhydrol (i.e. Michler's hydrol); and (2) a method of visually indicating when an article for controlling odor is saturated.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Springer teaches a method and apparatus for detecting changes in pH in the interiors of articles, such as **diapers, incontinence garments, pads**, etc. (title; abstract; [0002]). Springer teaches that olfactory detection of toxic levels of ammonia in diapers is no longer reliable, due to the development of superabsorbent diaper materials. The human detection threshold for ammonia gas is 5-50 ppm, but diaper barriers can contain the ammonia odor within the diaper, frustrating detection ([0004]-[0005]). The longer a diaper is worn the faster ammonia is formed and the faster pH rises, which can create a local environment **promoting the growth of microbes** (e.g. bacteria), which can result in diaper dermatitis ([0007]-[0008], [0027], [0031], [0033]). Springer's apparatus/method utilizes a combination of a sensor/indicator to alert caregivers of the need to change a diaper via an observable color change [Fig. 2; [0038]-[0039]]. Springer's apparatus includes a liquid permeable coversheet facing superimposed relation with the inner surface of a liquid impermeable coversheet and **an absorbent core**. An absorbent core reads on an odor absorbing material. Urine is transported to a chemically reactive means that includes a sensor that undergoes a color change to indicate pH (Id.). Several suitable indicators

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are taught, including alpha-naphtholbenzein ([0053]). Springer teaches a method comprising (i) applying a diaper having a means for indicating by visual color change the pH of the diaper interior to a subject, (ii) observing the color of the indicating means, and (iii) determining from the color change whether the diaper interior pH has reached an unsafe level. Because the pH changes detected by Springer's method are a consequence of the presence of ammonia dissolved in urine, Springer's method indirectly detects an odorous compound (i.e. ammonia).

Horan teaches a method for determining deleterious bacterial growth in packaged food, wherein a gas, such as CO, CO₂, hydrogen sulfide, sulfur dioxide, ammonia results in a color change in response to the presence of gases due to indicators dispersed throughout a polymeric matrix (Title; abstract; col. 1, lines 49-61). Alpha-naphtholbenzein is an exemplary indicator disclosed by Horan for the detection of gases evolved by bacteria, such as ammonia, hydrogen sulfide, or sulfur dioxide (col. 7, lines 48-56). Horan teaches that the chemical response of the indicator is typically concentration dependent (col. 7, lines 31-32).

MacDonald teaches modified nanoparticles coated with metal ions designed to remove odorous compounds from aqueous media and the air, which can be incorporated into a variety of products (e.g. filters, fabrics, paper towels, etc.) (abstract; [0001]; [0009]). Suitable nanoparticles include those of silica, alumina, gold, ZnO, etc. [0020]. Other known odor absorbing materials are also identified, such as activated carbon and sodium bicarbonate ([0003], [0025]). Suitable metal ions for inclusion in the nanoparticles include Cu²⁺, Ag⁺, Au⁺, Au³⁺, Fe²⁺, etc. [0022]. Two or more metal-modified nanoparticles may be included to remove a variety of gaseous odor compounds, including aliphatic ketones, amines, ammonia, mercaptans, etc. [0025]-[0027].

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Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)

Springer lacks the teaching of an article with two or more zones of a visual indicator at different concentrations. This deficiency is cured by the teachings of Horan. Springer lacks the teaching of an article comprising nanoparticles modified with metals. This deficiency is cured by the teachings of Moran.

Finding of Prima Facie Obviousness Rationale and Motivation
(MPEP §2142-2143)

It would have been prima facie obvious to combine the teachings of Springer and Horan, because both references attempt to solve the problem of detecting gases produced by bacteria, which are indicative of other problems, such as deleterious side effects to diaper wearers (Springer) or the presence of pathogenic bacteria (Horan). Both references also identify bacteria as a source of the gases that are detected. Springer focuses on the use of a visual detection system responsive to pH changes caused by ammonia, whereas Horan focuses on the detection of gases that undergo a chemical reaction with a visual indicator to induce a color change that would indicate the presence of pathogenic bacteria. Both references recognize that color changes are suitable means to alert users of a given product of the presence of odor compounds (e.g. ammonia), which are indicative of other problematic circumstances (e.g. dangerous diaper pH levels or pathogenic bacteria). Thus, an ordinary skilled artisan would have been motivated to combine the cited references, because both references address the same problem: detection of gases via a visual indicator system. An ordinary skilled artisan per the teachings of Horan would recognize that the alpha-naphtholbenzein identified as a suitable indicator by Springer to detect

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the presence of ammonia and harmful pH changes in a diaper would also be suitable to detect the presence of malodorous compounds such as hydrogen sulfide and sulfur dioxide. Furthermore, an ordinary skilled artisan cognizant of Horan's teaching that the indicator chemical reaction leading to the visual color change is concentration dependent would be motivated to utilize varying concentrations of a particular indicator on an article to ensure that the presence of a malodorous gas would be detected by users of the article and/or caregivers. An ordinary skilled artisan would have had a reasonable expectation of successfully detecting odorous compounds such as ammonia, hydrogen sulfide, and sulfur dioxide upon combination of Springer's invented diaper apparatus and Horan's teachings, because both references identify alpha-naphtholbenzein as a suitable visual indicator.

Regarding the amount of naphtholbenzein utilized in Springer's diaper, Springer is silent. However, because Horan teaches that the indicator-gas chemical reaction is concentration dependent, an ordinary skilled artisan would have been motivated to modulate the amount of the visual indicator present on the article and its concentration on the article to obtain the desired result of an article exhibiting a color change due to the presence of ammonia and other gaseous products of bacteria reasonably expected to cause dangerous pH changes in a diaper interior (e.g. ammonia, sulfur dioxide, etc.). Regarding claims reciting product-by-process limitations of claimed articles (e.g. Applicants' claims 6-7), these process limitations are not deemed to materially affect the structure of the claimed article and are given no patentable weight.

Regarding the inclusion of nanoparticles, it would have been prima facie obvious to include odor absorbing nanoparticles in products, such as diapers, which are designed to contain pungent offensive-smelling bodily fluids (e.g. urine, feces, or combinations thereof),

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because MacDonald's modified nanoparticles are indicated for use in a variety of products and are indicated to be suitable for removal of odorous compounds. An ordinary skilled artisan would have had a reasonable expectation of successfully combining the teachings of Horan/Springer with the teachings of MacDonald, because McDonalds modified nanoparticles are taught as being suitable for inclusion in a variety of consumer products and are indicated as being suitable for the removal of odorous compounds from air and aqueous media (e.g. urine). Regarding the properties recited in new claims 43-44, these properties are properties of the visual indicator and would necessarily be present in the articles taught/suggested by the combined prior art. Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because the combined teachings of the prior art is fairly suggestive of the claimed invention.

Response to Arguments

Applicant's arguments with respect to claims 1, 4, 6-10, 14, 17, 21, 28-29, 31, 33, 35-44 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

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Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 5-7, and 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4-9 of copending Application No. 12/134,547 (copending ‘547). Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim articles (e.g. device) containing an indicator zone comprising the same indicators, wherein the indicators also act to absorb some odor. The primary difference between claims of the instant application and the cited claims of copending ‘547 is the recited intended use of the two articles and the recitation that the article of the instant application further comprises nanoparticles. A device is necessarily an article. For the breath testing device of copending ‘547 to function properly, it would necessarily require the absorption or adsorption of the odorous compounds causing bad breath, and would necessarily result in some finite odor control. Inclusion of nanoparticles is contemplated in copending application ‘547, as evidenced by dependent claim 6 of copending ‘547, which requires that the claimed device further comprises nanoparticles. Thus, the inclusion of nanoparticles in the instant application is an obvious variant of the claims of copending ‘547. Therefore, a person of ordinary skill in the art at the time of the instant invention would have found claims 1, 5-7, and 12 *prima facie* obvious over claims of 4-9 of or copending ‘547.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed March 30, 2009 have been fully considered but they are not persuasive. Applicants have traversed the instant rejection by noting that the instant claims require the presence of nanoparticles. This is found unpersuasive, because nanoparticles are an obvious modification contemplated copending '547, as evidenced by dependent claim 6 of copending '547, which recites nanoparticles.

Conclusion

Claims 1, 4-10, 12, 14, 17, 20-26, 28-29, and 31-44 are rejected. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Alstrum-Acevedo whose telephone number is (571) 272-5548. The examiner is on a flexible schedule, but can normally be reached on M-F ~10am~5:30 pm, and Saturdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/Johann R. Richter/
Supervisory Patent Examiner, Art Unit 1616